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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/565,504	12/21/2006	Kazumasa Ikushima	062005	9554

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WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP
1250 CONNECTICUT AVENUE, NW
SUITE 700
WASHINGTON, DC 20036

EXAMINER	
LEGESSE, HENOK D	
ART UNIT	PAPER NUMBER
2861	

MAIL DATE	DELIVERY MODE
07/26/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/565,504	IKUSHIMA, KAZUMASA	
	Examiner	Art Unit	
	Henok Legesse	2861	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *01/23/2006 & 03/28/006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. The abstract of the disclosure is objected to because the abstract is more than 150 words. Correction is required. See MPEP § 608.01(b).

3. The disclosure is objected to because of the following informalities: on page 2 in lines 2,3,and 13 the word/ phrase “such as work”, ”disclosing”, and ”problem” respectively appears to have grammatical error and /or improperly used in the sentences, On page 13, line 8, in the phrase “plunger head 21” the numeral is wrong and should be changed to “plunger head 22”. Appropriate correction is required.

Claim Objections

4. Claim 3 is objected to because of the following informalities: the use of phrase "onto a work" in the claim is unclear. For examination purpose it is interpreted as to mean liquid droplet receiving element. Appropriate correction is required.

5. Claim 4 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 1. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Suovaniemi et al.(US 5,343,769).

Regarding claim 1, Suovaniemi et al teaches a method of adjusting a liquid droplet quantity (using device in figs.1, 2), in which, by a forward movement and a forward stopping of a plunger (4) sliding while closely contacting with an inner wall face of a tube (6), a discharge quantity of the liquid droplet discharged from a discharge port

communicating with the tube (6) is adjusted (controller 13 controls the movement of plunger 4 in such a way that a predetermined amount of liquid is dispensed. See figs.2-4; col.4, lines 36-68; col.5, lines 1-3), wherein a moving speed of the plunger (4) moving forward from start of deceleration to stop is adjusted (col.5, lines 47-50) such that the liquid droplet discharged from the discharge port becomes constant at every discharge (see fig.5; col.5, lines 59-68 during liquid dispensing initially the driving motor 8 is accelerated thereby the plunger 4,step A, up to a desired level B and is maintained close to end point C at this point the motor 8 thereby the plunger 4 is decelerated until it stops).

Regarding claim 2, Suovaniemi et al further teaches the liquid droplet is discharged by controlling (using controller 13 in fig.4) an operation of the plunger (4 in fig.2) to a moving speed adjusted (the moving speed of the plunger 4 is controlled by controller 13 in fig.4. see figs.3 and 4; col.5, lines 47-50).

Regarding claim 3, Suovaniemi et al further teaches the liquid droplet discharged or dispensed by the method of moving a plunger as in claim 2 above, inherently is dispensed on to some kind of liquid droplet receiving element and the dispensed droplet inherently covers or coats portion of the liquid droplet receiving element.

Regarding claim 4, Suovaniemi et al teaches a method of forming a liquid droplet (using device in figs.1, 2), in which a liquid material (liquid in element 6 of fig.2)

discharged from a nozzle tip is formed into the liquid droplet by a forward movement of a plunger (4) sliding while closely contacting with an inner wall face of a tube (6), wherein a uniform liquid droplet (predetermined amount of droplet is dispensed; See figs.2-4; col.4, lines 36-68; col.5, lines 1-3) is formed by controlling (using controller 13 in fig.4) a speed of the plunger (4, fig.2) moving forward from start of deceleration to stop (see fig.5; col.5, lines 59-68).

Regarding claim 5, Suovaniemi et al teaches an apparatus (figs.1, 2) for discharging a liquid material, which possesses a tube (6), a plunger (4) sliding while closely contacting with an inner wall face of the tube (6), a discharge port (see fig.2) communicating with the tube (6) and discharging the liquid material (in 6) so as to be scattered, and a control means (13 in fig.4) controlling an operation of the plunger (controller 13 controls the movement of plunger 4 in such a way that a predetermined amount of liquid is dispensed. See figs.2-4; col.4, lines 36-68; col.5, lines 1-3), wherein the control means (13) controls a moving speed of the plunger (4) moving forward from start of deceleration to stop is adjusted such that the liquid droplet discharged from the discharge port becomes constant at every discharge (see fig.5; col.5, lines 47-50 and lines 59-68).

Regarding claim 6, Suovaniemi et al further teaches input means (detector 14 in fig.4 which includes sensors 23 and 24 in fig.3) indicating the moving speed of the plunger (4 in fig.2, col.4, lines 40-44) moving forward from start of deceleration to stop

to the control means (13 in fig.4) (detector 14 including sensors 23,24 measures the position and / or position of plunger 14, col.3 lines 59-61. see also figs.4, 5 and the corresponding text).

Regarding claim 7, Suovaniemi et al further teaches the control means (13, in fig.4) controls the operation of the plunger (4 in fig.2) on the basis of data concerning the moving speed of the plunger (4) moving forward from start of deceleration to stop, which has been inputted by the input means (14,23,24 figs.3, 4) (col.4, lines 18-68).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Henok Legesse whose telephone number is (571) 270-1615. The examiner can normally be reached on Mon - FRI, 7:30-5:00, ALT.FRI EST.TIME.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Luu can be reached on (571) 272-7663. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

*** H.L.
07/20/2007

MATTHEW LUU
SUPERVISORY PATENT EXAMINER